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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,210	02/27/2004	Thomas J. Plona	26.0273 US	9128
7590 Schlumberger K.K. Intellectual Property and Legal Department 2-2-1 Fuchinobe, Sagamihara-shi Kanagawa-ken, 229-0006 JAPAN			EXAMINER HUGHES, SCOTT A	
			ART UNIT 3663	PAPER NUMBER
			MAIL DATE 08/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/789,210

Applicant(s)

PLONA ET AL.

Examiner

Scott A. Hughes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4, 5, 7-18, 20-23, 25-54 and 58-79 is/are pending in the application.
- 4a) Of the above claim(s) 20-23, 25-54, 62-73, 75 and 78 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4, 5, 7-18, 58-61, 74, 76, 77 and 79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/23/2007 with respect to the objection to the drawings in view of the amendments to the claims are persuasive. The objection to the drawings is withdrawn.

Applicant's arguments and amendments filed 5/23/2007 are sufficient to overcome the rejections under 35 USC 112. These rejections are withdrawn.

Applicant's arguments filed 5/23/2007 with respect to the rejections under 35 USC 102 and 103 have been fully considered but they are not persuasive.

Applicant argues that the Kimball reference does not process acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth. Applicant argues that Kimball selects a model curve, and that this is not the same as processing acquired data to generate dispersion curves. This argument is not persuasive because the sonic data acquired in Kimball is used in the selection of the model curve. Since the acquired data is used in the process of selecting the model curve and generating slowness versus frequency curves for the depths (See especially columns 11-14), it meets the claim limitations.

Applicant argues that Kimball also fails to disclose displaying a projection of dispersion curve data for each depth versus depth. This argument is not persuasive since Kimball projects the data from the dispersion curves to a new display of the data versus depth (Columns 14-16) (Figs. 4-6). The result of the method of Kimball is that

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the dispersion curve data has been projected onto a new display that displays the data versus depth.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 74, 76, 77, 79, and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimball (5278805).

With regard to claim 74, Kimball discloses a method displaying sonic logging data associated with an earth formation surrounding a borehole (abstract). Kimball discloses acquiring sonic data at a plurality of depths in a borehole (Figs. 1, 6) (Column 4, Line 35 to Column 5, Line 40). Kimball discloses processing the acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth (Figs. 3a,b; 4) (abstract; Column 4, Lines 35-55; Column 7, Lines 14-68; Columns 11-14; Column 15 Line 6 to Column 16, Line 10). Kimball discloses displaying a projection log of dispersion curve data for each depth versus depth (Figs. 3a,b; 4-6) (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 14 Line 23 to Column 16, Line 10).

With regard to claim 76, Kimball discloses a system for displaying sonic logging data associated with an earth formation surrounding a borehole (abstract). Kimball discloses means for acquiring sonic data at a plurality of depths in a borehole (Figs. 1,

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6) (Column 4, Line 35 to Column 5, Line 40). Kimball discloses means for processing the acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth (Figs. 3a,b; 4) (abstract; Column 4, Lines 35-55; Column 7, Lines 14-68; Columns 11-14; Column 15 Line 6 to Column 16, Line 10). Kimball discloses means for displaying associated with the processing means and configured or designed to display a projection log of dispersion curve data for each depth versus depth (Figs. 3a,b; 4-6) (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 14 Line 23 to Column 16, Line 10).

With regard to claim 77, Kimball discloses projecting the slowness-frequency data onto the slowness axis (Fig. 6).

With regard to claim 79, Kimball discloses means for projecting the slowness-frequency data onto the slowness axis (Fig. 6).

With regard to claim 7, Kimball discloses that the dispersion curve data are displayed in one dimension (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10) (Fig. 6).

With regard to claim 8, Kimball discloses that the displayed dispersion curve data includes dipole flexural information which has been projected onto a slowness axis (Column 7, Lines 25-55; Columns 13-15).

With regard to claim 9, Kimball discloses that the displayed dispersion curve data includes dipole compressional information that has been projected onto a slowness axis (Columns 1; 13).

With regard to claim 10, Kimball discloses that the acquired sonic data corresponds to sonic logging data generated by at least one source selected from the group consisting of a dipole source, a monopole source, and a quadrapole source (Column 4, Line 35 to Column 5, Line 40; Column 7, Lines 15-45).

With regard to claim 11, Kimball discloses that the acquired sonic data corresponds to sonic logging data selected from the group consisting of fast dipole shear data, slow dipole shear data, low-frequency monopole data, and high frequency monopole data (Column 4, Line 35 to Column 5, Line 40; Column 7, Lines 15-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 and 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claims 74 and 76 above, and further in view of Bose.

With regard to claim 4, Kimball does not disclose that display includes homogeneous and inhomogeneous characteristics of the dispersion curve data. Bose teaches a method of sonic logging. Bose teaches that the information displayed in an SFA log display includes homogeneous and inhomogeneous characteristics of the dispersion curve data (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in the display from sonic logging that include

homogenous and inhomogeneous characteristics of the dispersion curve data in order to look for damage to the formation near the borehole.

With regard to claim 5, Kimball does not disclose that the information displayed in the display includes isotropic and anisotropic characteristics of the dispersion curve data. Bose teaches information displayed in an SFA log display includes isotropic and anisotropic characteristics of the dispersion curve data (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in the display from sonic logging data that include isotropic and anisotropic characteristics of the dispersion curve data in order determine properties of the formation relating to shear slowness around the borehole.

With regard to claim 58, Kimball does not disclose that information displayed includes homogeneous and inhomogeneous characteristics of the dispersion curve data. Bose teaches a method of sonic logging. Bose teaches that the information displayed in an SFA log display includes homogeneous and inhomogeneous characteristics of the dispersion curve data (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in the display from sonic logging that include homogenous and inhomogeneous characteristics of the dispersion curve data in order to look for damage to the formation near the borehole.

With regard to claim 59, Kimball does not disclose that the information displayed in the display includes isotropic and anisotropic characteristics of the dispersion curve data. Bose teaches information displayed in an SFA log display includes isotropic and anisotropic characteristics of the dispersion curve data (Fig. 17) (Columns 9-10). It

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would have been obvious to modify Kimball to include information in the display from sonic logging data that include isotropic and anisotropic characteristics of the dispersion curve data in order determine properties of the formation relating to shear slowness around the borehole.

The "wherein the information displayed" clauses of claims 58 and 59 are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon (information displayed) does not serve to limit an apparatus claim.

Claims 12-13 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claims 74 and 76 above, and further in view of Kimball

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(Geophysics March-April 1998 – referred to in this action as Kimball (Geophysics 1998) to distinguish from the Kimball reference used for claim 74).

With regard to claim 12, Kimball does not disclose displaying an overlay of estimated wave slowness information onto the displayed dispersion curve data. Kimball (Geophysics 1998) teaches displaying estimated wave slowness as an overlay onto an dispersion curve data display (Figs. 5-6). It would have been obvious to modify Kimball to include a display as taught by Kimball (geophysics 1998) in order to compare the determined slowness from different methods on the displays.

With regard to claim 13, Kimball discloses that the estimated wave slowness information includes information from the group consisting of fast estimated shear wave slowness, estimated compressional wave slowness, and estimated Stoneley wave slowness (Column 7).

With regard to claim 60, Kimball does not disclose means for generating, using slowness-versus-frequency dispersion curve information, estimated wave slowness information. Kimball does not disclose means for displaying an overlay of estimated wave slowness information onto the displayed dispersion curve data. Kimball (Geophysics 1998) teaches means for generating and displaying estimated wave slowness as an overlay onto an dispersion curve display (Figs. 5-6). It would have been obvious to modify Kimball to include a means for a display as taught by Kimball (geophysics 1998) in order to compare the determined slowness from different methods on the displays

Claims 14-17 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claims 74 and 76 above, and further in view of Stark

With regard to claim 14, Kimball does not disclose that the display further comprises a navigable mechanism configured or designed to link the display to additional logging information associated with selected depths. Stark discloses the use of a navigable mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 15, Kimball discloses that the display further includes depth specific sonic logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Kimball does not disclose that the information relates to a depth selected by the navigable mechanism. Stark discloses selecting data by use of a mechanism (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 16, Kimball does not disclose that the navigable mechanism is further configured or designed to automatically scroll through the display in a manner which causes additional depth specific sonic logging information to automatically be displayed. Stark discloses that the mechanism (mouse) can continuously provide points

as the mouse is moved in order to provide a continuous "movie" style presentation. It would have been obvious to modify Kimball to include using a mouse that continuously provides information about the part of the display it is placed over in order to be able to see information about any part of the display on which the mouse is placed in order to compare it to other parts of the display.

With regard to claim 17, Kimball does not disclose that the display further comprises a navigable mechanism configured or designed to link the display to additional depth specific logging information associated with selected depths. Kimball discloses that the display further includes depth specific display information relating to selected characteristics of the depth specific logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Stark discloses the use of a navigable mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 61, Kimball does not disclose that the displaying means further comprise a navigable means for linking the displaying means to depth specific logging information associated with selected depths. Kimball discloses that the display further includes depth specific display information relating to selected characteristics of the depth specific logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Stark discloses the use of a navigable mechanism in seismic displays for the

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purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer means as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball in view of Stark as applied to claim 17 above, and further in view of Kimball (Geophysics March-April 1998)

With regard to claim 18, Kimball (Geophysics 1998) teaches that the depth specific display information is displayed concurrently with the dispersion curve data for each depth (Figs. 5-6). It would have been obvious to modify Kimball to include displaying the information concurrently with the dispersion curve data for each depth information in order to track slowness with the depth along the borehole.

Conclusion

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SAH
JACK KEITH
SUPERVISORY PATENT EXAMINER